# Landsat 7 Image Assessment System (IAS)
# Installation Procedure

## DRAFT

## April 1997

**Note to reviewers: This draft was created by modifying the LPS Installation Procedure document. In some places the LPS document text has been retained to clarify the type of information needed for IAS. In addition, many sections have a comment (starting with 3 asterisks) on the changes needed in that section.**

**Goddard Space Flight Center**
**Greenbelt, Maryland**

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*** Need to check GSFC names. These are copied from LPS.

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# List of TBDs, TBRs, and TBSs

| Reference | Description | Page |
|---|---|---|

| **CHANGE STATUS LOG** | | | |
|---|---|---|---|
| Document No.: 514- | | | |
| Title: *Landsat 7 Image Assessment System (IAS) Installation Procedure* | | | |
| **Change** | **Date** | **Affected Pages** | **Remarks** |
| Draft | Apr 1997 | ALL | Baseline |

# Preface

This document contains the installation and checkout procedures for the Landsat 7 Image Assessment System (IAS) located at the Earth Resources Observation System (EROS) Data Center (EDC). It is controlled by the IAS Project Configuration Management Board (PCMB) and may be updated by document change notice (DCN) or revision. Direct comments and questions regarding this document to

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*** Revise list of figures as needed for IAS equipment.

# Section 1—Introduction

## 1.1 Purpose and Scope of Document

This document contains the installation and checkout procedures for the Landsat 7 Image Assessment System (IAS) located at the Earth Resources Observation System (EROS) Data Center (EDC). Included in this document are the EDC site preparation information for the IAS facility, the IAS installation instructions and equipment checkout procedures. Within the EDC, the Data Handling Facility (DHF) will have operational responsibility for the IAS. This document also describes the turnover of the IAS to the EDC DHF after completion of the installation.

## 1.2 Landsat 7 Image Assessment System Description

The IAS architecture is described in *Landsat 7 Image Assessment System Design Specification* (Applicable Document 1.4.4). Information regarding external interfaces between the IAS and other systems is contained in the various interface control documents (ICDs) listed in Section 1.4. *Landsat 7 Image Assessment System Operations and Maintenance Manual* (Applicable Document 1.4.7) provides additional information on the IAS.

## 1.3 Installation Approach

Following completion of the IAS factory acceptance test (FAT) at Goddard Space Flight Center (GSFC), the IAS equipment will be shipped to the EDC. The IAS will then be physically located at the IAS-designated site noted in *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1). It is expected that the IAS-designated site is designed and prepared in accordance with the specifications contained in *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1). Section 2 provides IAS facility preparation related information for reference and verification during the IAS installation. After the system is connected to the power, signal, and network cables (as described in Section 3), checkout will be performed (as described in Section 4). On completion of the checkout and subsequent site acceptance test (SAT), the IAS equipment will be formally turned over to the EDC DHF (Section 5).

The final testing of IAS interfaces to the EDC Distributed Active Archive Center (DAAC) system, the Landsat 7 Processing System (LPS), and the Mission Operations Center (MOC) will be performed during the SAT (the SAT schedule is provided in the IAS Transition Plan ( Applicable Document 1.4.2)). This document contains test procedures that verify the functionality of the IAS interfaces prior to connection to the external interfaces.

### 1.3.1 Shipment and Installation Schedule

The IAS will be shipped to the EDC following completion of the FAT at GSFC. The baseline schedules for the IAS FAT, shipment, and installation are noted in *IAS Transition Plan* (Applicable Document 1.4.2).

### 1.3.2 Prerequisite for IAS Installation

Two prerequisites are required to begin the installation of the IAS at the EDC:

1. Completion of IAS FAT at GSFC

2. Site readiness at the EDC.

The EDC DHF is responsible for reviewing the status of these prerequisites at the consent to ship review after culminating the FAT.

### 1.3.3 Installation Responsibilities

The GSFC IAS Project is responsible for the installation of IAS equipment at the EDC. The IAS to EDC network(s) connection responsibilities are designated as follows:

***** Need to clarify responsibilities. Is EBnet involved ?**

- ~~The LPS Project will provide two **(TBD)** foot fiber-optic cables that connect the LPS fiber distributed data interface (FDDI) network to the EBnet.~~

- ~~The EBnet project is responsible for providing the FDDI concentrator (Applicable Document 1.4.7).~~

- The EDC DHF is responsible for preparing the onsite network interconnections to the ~~LPS~~ 10Base-T Hub.

The EDC DHF will provide the following information, which is needed to facilitate the IAS connections to the EDC Ethernet and the FDDI local area network (LAN):

- ~~Cable connection from the EDC Ethernet LAN to the LPS 10Base-T Hub~~

- Ethernet IP addresses for

  – IAS SGI Origin 2000 Server

  – IAS SGI Origin O2 workstations 1, 2, and 3

Table 1-1 lists the GSFC IAS Project and the EDC DHF responsibilities for performing and/or supporting IAS facility preparation, installation, checkout and turnover.

**Table 1-1. IAS Installation Responsibilities Matrix**

***** In general, check this table. Is EBnet needed ? When do D.3 and D.4 occur ?**

| Installation Activity (An x indicates performing Responsibility) | GSFC IAS Project | EDC DHF | EBnet Project ??? |
|---|---|---|---|
| **A. IAS and Facility Preparation** | | | |
| ~~1. Provide two **(TBD)** feet LPS FDDI-EBnet fiber-optic cables~~ | ~~x~~ | | |
| ~~2. Provide FDDI concentrator~~ | | | ~~x~~ |
| 3. Prepare ethernet network connections for IAS to10Base-T Hub | | x | |
| 4. Identify ethernet cable connections to 10Base-T Hub | | x | |
| 5. Provide FDDI IP addresses on EBnet for IAS ? | | | x |
| 6. Provide Ethernet IP addresses for IAS SGI Origin 2000 Server | | x | |
| 7. Provide Ethernet IP addresses for IAS Origin O2 Workstations 1, 2, and 3 | | x | |
| 8. Assign IAS site installation representative | | x | |
| **B. IAS Installation** | | | |
| 1. Complete FAT at GSFC | | x | |
| 2. Ship IAS | x | | |
| 3. Identify EDC floor for IAS installation | | x | |
| 4. Unpack IAS | | x | |
| 5. Identify IAS Junction boxes and circuit breakers | | x | |

**Table 1-1. IAS Installation Responsibilities Matrix (Contd.)**

| Installation Activity | GSFC IAS Project | EDC DHF | EBnet Project ??? |
|---|---|---|---|
| 6. Provide floor cut-out panels | | x | |
| 7. Physical installation, including IAS cables | x | | |
| 8. Label IAS cables | x | | |
| **C. IAS Checkout** | | | |
| 1. Provide IAS Login name and password | x | receive | |

| | | | |
|---|---|---|---|
| 2. Checkout IAS Origin 2000 server, disk storage, tape storage, printer, and workstation installation | x | | |
| 3. Demonstrate IAS | x | | |
| 4. Log installation & demonstration problems | x | review | |
| 5. Checkout cable connections and interface to the Ethernet and FDDI | x | support | |
| 6. Checkout cable connections and interface to the EDC DAAC, if available *** What does this mean ? | x | support | |
| **D. IAS Turnover** | | | |
| 1. Turn over IAS COTS hardware and software | x | review | |
| 2. Turn over IAS COTS hardware and software configuration records | x | review | |
| 3. Turn over IAS software backup tapes | x | receive | |
| 4. Turn over IAS COTS hardware and software vendor manuals | x | receive | |
| 5. Perform IAS site acceptance test (SAT) | support | x | |

## 1.4 Applicable Documents

*** Add ICDs with LPS, MOC, DAAC, LPGS ?

1.EROS Data Center, *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS*, July 26, 1996

2.NASA/GSFC, 514-, *IAS Transition Plan*, March 1997 (Draft)

3.—, 514-, *IAS Release Implementation Plan*, , March 1997 (Draft)

4.—, , *Landsat 7 Image Assessment System (IAS) System Design Specifications*,

5.—, 209-CD-013-004, *Interface Control Document Between EOSDIS Core System (ECS) and the Landsat 7 System*, August 1996 ***** Is this relevant ?**

6.—, 540-097, *Interface Control Document Between the EBnet and the Landsat 7 Processing System (LPS)*, July 1996 ***** Is there a similar document for IAS ?**

7.—, 514-, *Landsat 7 Image Asessment System (IAS) Operations and Maintenance Manual*,

8.—, 514-3SUG/01, *Landsat 7 Image Assessment System User's Guide*,

9.—, (**TBD**), *Landsat 7 Image Assessment System (IAS) Software Configuration Guide*, ***** Will this be prepared ?**

10. —, (**TBD**), *Landsat 7 Image Assessment System (LPS) Programmers Reference Manual*,

## 1.5 Vendor Documents

***** Update list as appropriate for IAS. Some of these can probably be kept. Software vendor documentation too ?**

1.Silicon Graphics, Inc., 108-7040-020, *Challenge/Onyx Site Preparation Guide*, 1993

2.—, 007-1735-040, *Power Challenge™ and Challenge XL Rackmount Owner's Guide*, February 1996

3.—, 007-9804-050, *Indy™ Workstation Owner's Guide*, February 1996

4.IRIS Insight Library, "Deckside Power Challenge and Challenge L Owner's Guide" (This online documentation is available on the SGI Challenge L system drive.)

5.Ciprico, Inc., Publication No. 21020270A, *AD6700 Integrated Disk Array Quick Installation Guide*, August 1993

6.—, Publication No. 21020650A, *Addendum to the Disk Array Guide*, March 1994

7.—, Publication No. 21020295H, *Product Note for 6700/10 Disk Arrays and Controller Boards*, April 1995

8.Silicon Graphics, Inc., 007-2266-001, *Digital Linear Tape Drive Owner's Guide*, 1994

9.Network Computing Devices, Inc., Part No. 9300326, *Installing Your HMX Family System*, Revision A, February 1995

10. General Standard Corporation, *High Speed Parallel Digital Interface (HPDI)/Very High Speed Serial Interface (VSIO) Card User's Manual*, (**TBS)**

11. Network Computing Devices, Inc., Part No. 9300289, *About Your 21-Inch Color Monitor NC2185AA*, Revision A, April 1994

12. Epson America, Inc., X-LQ570PLUS, *Epson LQ-570+ (Label) Printer User's Guide*

13. Hewlett-Packard, Publication No. C3916-90901, *LaserJet5 and 5M Printer User's Manual*

14. Silicon Graphics, Inc., 007-2872-001, *IRISconsole Administrator's Guide*

# Section 2—IAS Facility Preparation Information

This section provides information on floor space, floor loading, power and grounding, and heat dissipation for the IAS to be installed at the EDC site. Detailed requirements and design specifications for preparing the IAS installation site are provided in *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1).

A detailed list, including item quantities, of the IAS equipment to be installed at the EDC is provided in Table 5-1.

## 2.1 Floor Space

The EDC site floorplan and computer room layout for the IAS are shown in *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1).

***** Need to determine if there are special clearance and access requirements analogous to following paragraph for Origin 2000 or other IAS equipment.**

Silicon Graphics, Inc. (SGI) specifies a minimum ceiling height of 96 inches to allow for ~~Challenge XL~~? cabinet airflow clearance. Also, the ~~Challenge XL~~? cabinet requires 36-inch wide clearances in the front and back of the cabinets to allow the doors to fully open. For activities that use side access, adequate space is required to roll the cabinet forward or backward to provide side clearance.

## 2.2 Floor Loading

***** What are the IAS floor loading requirements ?**

For installations on raised floors, minimum floor loading is 133 pounds per square foot to support the SGI ~~Challenge XL~~Origin 2000 ???. The SGI ~~Challenge XL~~Origin 2000 cabinets use four casters and four stabilizing levelers for weight distribution. ??? If the floor is modified (for example, by adding cutouts for cable access), the EDC DHF should determine and provide the additional reinforcement, as required.

## 2.3 Power and Grounding

Table 2–1 summarizes the alternating current (ac) power information for the IAS equipment.

*Table 2–1. ac Power Information for ~~LPS~~IAS Equipment*

***** Need to update for IAS power requirements.**

| Equipment | Power VAC (min/nom/max) | Hertz (min/max) | Phase | Amps | Connector Type |
|---|---|---|---|---|---|
| ~~Challenge XL~~ Origin 2000 | 187/208/264 ? | 50/60 ? | 2 ? | 24 ? | NEMA L6-30R) twist-lock type, 2-P, 3-W, 30A, 250V) ? |
| RAID/DLT cabinet | 100/120 ? | 50/60 ? | 1 ? | 14 ? | NEMA 5-15P (100/120V @ 15 Amps) ? |
| ~~Indy~~ Origin O2 workstation<br>- System chassis<br>- Monitor | <br>100/132 ?<br>100/132 ? | <br>47/63 ?<br>47/63 ? | <br>1 ?<br>1 ? | <br>4.2 ?<br>2.7 ? | NEMA 5-15P ? |
| | | | | | |
| Hewlett-Packard LaserJet5 printer ? | 100/127(+/-10%) ? | 50/60 ? | 1 ? | 11.2 ? | NEMA 5-15P ? |
| | | | | | |
| | | | | | |
| Ethernet 10Base-T Smart Hub | 110 ? | 50/60 ? | 1 ? | 0.5 ? | NEMA 5-15P ? |

The IAS equipment/racks should be grounded as specified in *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1). There are no special grounding requirements for the IAS equipment. ???

## 2.4 Heat Dissipation

The heat dissipation information on IAS equipment is as follows:

***** Update for IAS equipment. Check NOTE below table.**

| Equipment | No. of Units | ac Load (ton) (each unit/system) | Btu/Hour (each unit/system) |
|---|---|---|---|
| ~~Challenge XL~~Origin 2000 | ~~5~~1 | 1.33 ? | 16,000 ? |
| ~~Indy~~Origin O2 | 3 | 0.075 ? | 900 ? |
| DLT | ~~5~~1 | 0.028 ? | 340 ? |
| RAID | ~~10~~1 | 0.085 ? | 1,020 ? |
| | | | |
| Printer~~s~~ | ~~2~~1 | 0.090 ? | 1080 ? |

| | | | |
|---|---|---|---|
| **IAS Totals (All Units)** | | | |

NOTE: ~~The Challenge cabinet airflow is drawn in through the bottom and blown out through the top~~. The DLT/RAID cabinet pulls in air from the front and exhausts out the back. The ~~Challenge cabinets and~~ RAID/DLT cabinets will be positioned above vented floor tiles. ???

# Section 3—System Installation

## 3.1 Introduction

This section provides information for installing the IAS equipment. Once the IAS site at the EDC has been prepared in accordance with *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1) and verified by the EDC DHF at the Consent to Ship Review (see Applicable Document 1.4.2), the IAS equipment can be shipped from GSFC and installed at the EDC DHF. This section provides information on unpacking and inspection, layout, ac power connections, cabling, and software installation for the IAS at the EDC site.

***** Confirm contract arrangement with SGI for installation.**

The information provided in this section refers to the installation of the entire IAS. SGI will be contracted by the GSFC IAS project to install the Origin 2000, and Origin O2 workstations ??? . GSFC IAS project personnel will install the IAS components not covered under the SGI contract.

## 3.2 Unpacking and Inspection

EDC DHF personnel will be responsible for unpacking and inspecting IAS equipment at the EDC loading/receiving area. Check packing containers for external damage before removing the contents. Use care in handling and removing the components and the packing material. EDC DHF personnel will move the IAS equipment from the loading/receiving area to the IAS floor.

## 3.3 Equipment Layout

The EDC computer room layout and the position of IAS equipment layout are shown in *EDC Site Preparation Plan for the Installation of the Landsat 7 LGS, LPS, and IAS* (Applicable Document 1.4.1). With assistance from the EDC DHF facility coordinator, GSFC IAS project personnel will install IAS equipment on the IAS floor.

## 3.4 ac Power Connection

The IAS site power and connector information is provided in Section 2.3. Connect the IAS equipment to the designated junction boxes at the EDC. Make sure that all power switches of all IAS equipment are in the OFF position during the power connection. Also, identify and locate the circuit breakers associated with all IAS designated junction boxes before starting IAS equipment installation.

***** Need to determine power connector locations for IAS equipment in following 3 paragraphs.**

The Origin 2000 ac power connector is located at the bottom of the rear of the cabinet (Figure 3–1). ??? The rear door does not have to be opened to access this connector. ???

The RAID/DLT cabinet ac power strip connector is located at the rear of each cabinet. Open the cabinet rear door to gain access to the connector.

The Origin O2 and printer ac power connections are accessible on each chassis. Refer to vendor documentation (Section 1.5) for these components.

## 3.5 Cabling

***** Check the O&M manual for cable info. (O&M manual not available yet.)**

The cable listing and cable interconnections diagram of IAS are shown in Appendix B of *IAS Operations and Maintenance Manual* (Applicable Document 1.4.7).

GSFC IAS personnel will install cables between IAS subsystems and/or equipment as shown in the IAS interconnection diagram. The cables are individually designated by a cable number. The cable ends are labeled for the connection equipment (or location). The IAS cable labeling scheme is also defined in *IAS Operations and Maintenance Manual* (Applicable Document 1.4.7).

Place IAS cables under the floor panels using aisles or walkways for the cable routes. Sufficient cable length has been provided. Bundle the cables within the cabinets in a convenient manner using cable ties. Allow sufficient service loops. Ensure that the labels are clearly visible.

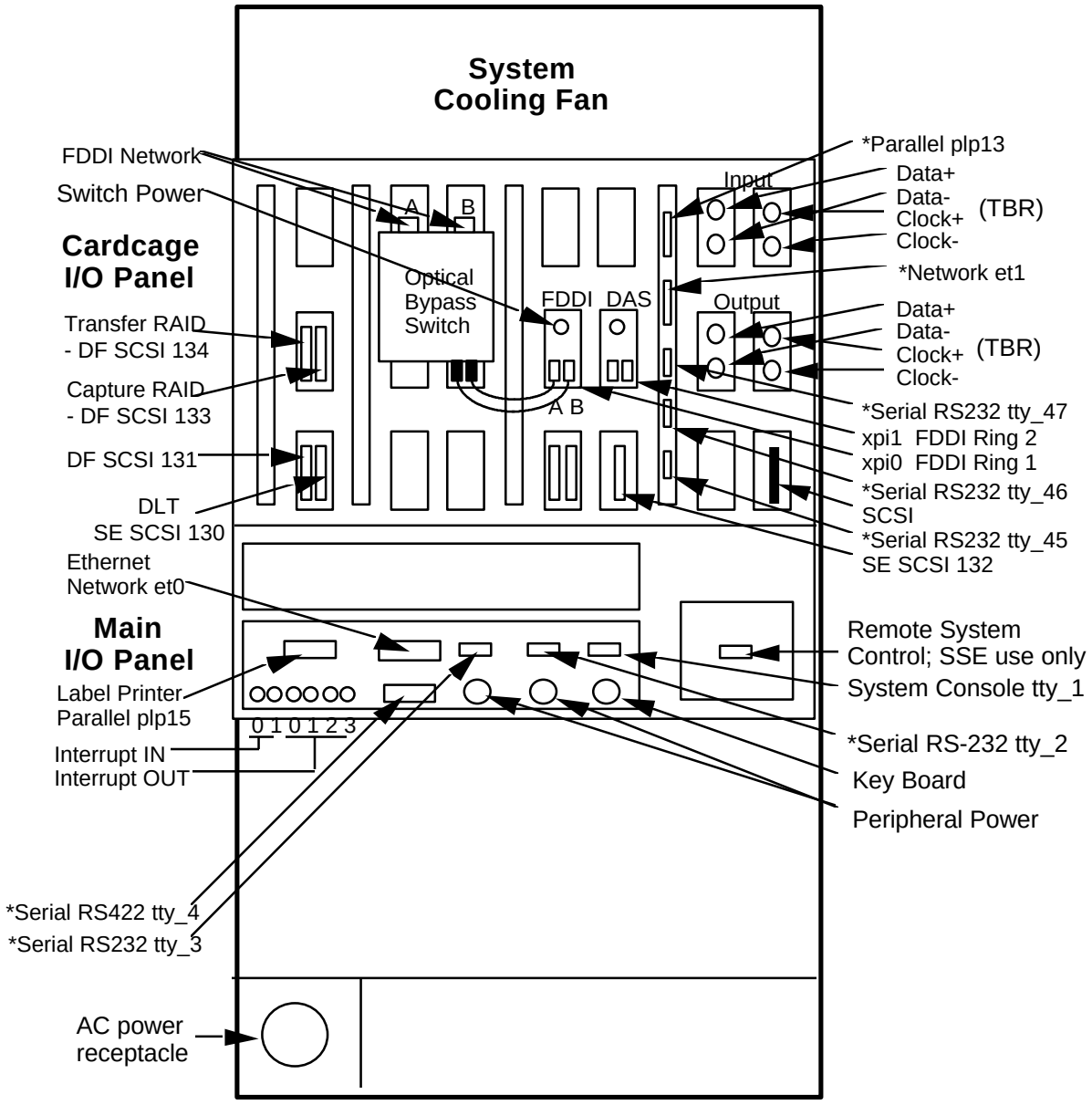
***** Determine cable connection locations for IAS equipment.**

The Origin 2000 input/output cable connections are located on the connector panels at the rear of the cabinet (Figure 3–1). ??? -Open the rear doors to gain access to these connectors.

The RAID/DLT cabinet cable connections are located on the rear of each component within the cabinet (Figure 3–2). ??? Open the cabinet rear door to gain access to these connectors.

The Origin O2 Workstation cable connections are located on the rear of unit (Figure 3-3). ??? -Refer to vendor documentation (Section 1.5) for more details.

The printer connectors are accessible on the chassis. Refer to vendor documentation (Section 1.5) for these components.




* indicates no cable connected to the output port

***** Replace figure with equivalent for Origin 2000.**

***Figure 3–1. Challenge XL – Rear View, Doors Open***

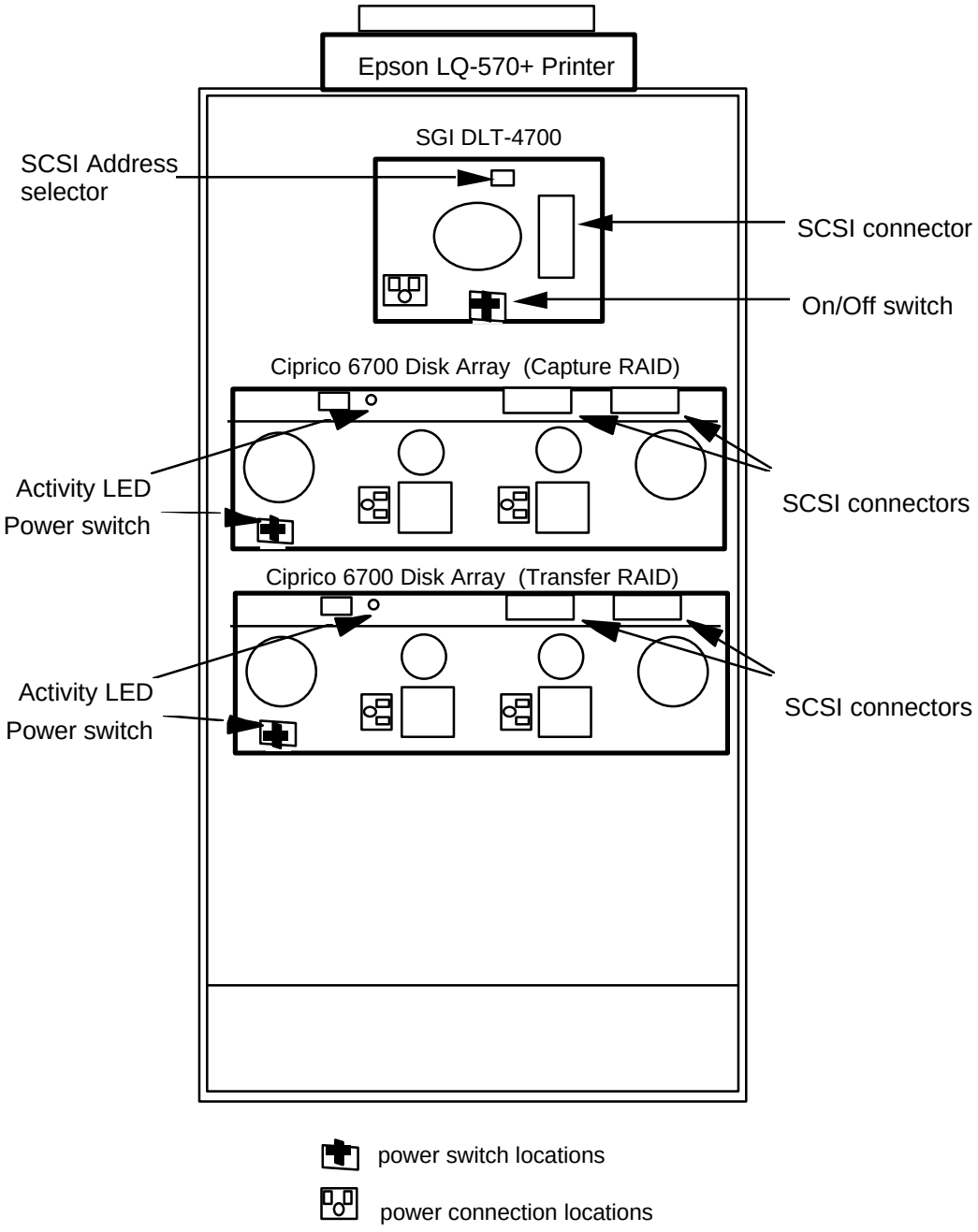



***Figure 3–2. RAID/DLT/Label Printer Cabinet – Rear View (TBD)***

***** Replace figure with equivalent for IAS RAID/DLT.**

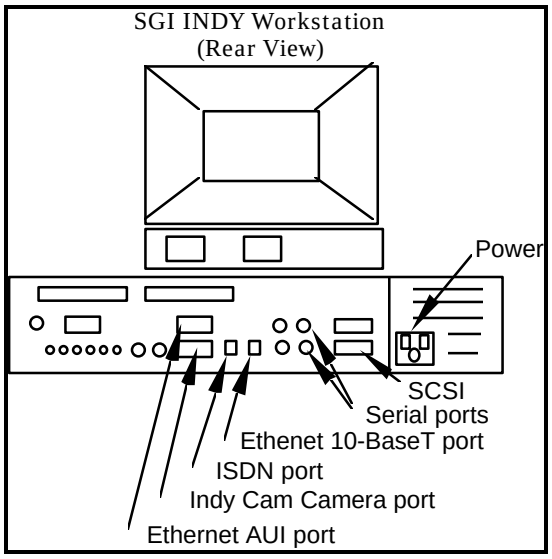



***Figure 3–3. SGI Indy Workstation – Rear View***

***** Replace figure with equivalent for Origin O2 workstation.**

## 3.6 Software Installation

The IAS operational software is installed on the Origin 2000 system drive and on the Origin O2 analyst workstations prior to shipment to the EDC. Therefore,IAS software installation on the Origin 2000 server and Origin O2 workstations is not required at the EDC site. The GSFC IAS personnel will be able to reinstall IAS software, if for some reason the software is found to be corrupted during IAS installation at EDC

GSFC IAS personnel will install copies of the IAS operational software on the SGI Origin 2000 used as the Landsat-7 Integration and Test system and on the SGI Origin 2000 used as the Landsat-7 Development and Maintenance System.

# Section 4—System Checkout

## 4.1 Introduction

This section describes the checkout of the hardware installation for the IAS. Sections 4.3 through 4.13 constitute a complete checkout procedure. A checklist is provided in Appendix A for the checkout procedure.

***** What will be involvement of SGI in checkout ?**

~~Under the existing maintenance contract, SGI~~With assistance from SGI, GSFC IAS project personnel will verify the integrity of the Origin 2000 and Origin O2 workstations, (Sections 4.4 and 4.5). Checkout procedures are provided to verify the installation. GSFC IAS project personnel will perform the checkout of the entire IAS. (NOTE: The login name and password of each system are provided by GSFC IAS project personnel to EDC DHF personnel.) ???

Included in the checkout procedure are references to the equipment setup procedures in *IAS Operations and Maintenance Manual* (Applicable Document 1.4.7). This procedure shall be exercised for the Origin 2000 server and Origin O2 workstations after relocation to the EDC.

Following completion of system checkout, the IAS is available for site acceptance testing.

## 4.2 Problem Tracking and Correction

The IAS Interactive Configuration Change Request (CCR) Automation System (ICAS) procedures, remotely accessible at the EDC, will be used to document and track hardware and software problems.

## 4.3 IAS Startup

***** Need power-up procedures for IAS equipment to rewrite this entire section.**

Apply power to the following IAS equipment:

- Origin 2000 cabinet —Turn on power at the switch located ~~behind the lower front door~~ (Figure 4–1). Verify that ~~both power supplies have green light emitting diodes (LEDs) lit. Insert the key into the lock on the front panel and turn clockwise to 12:00 (ON) position. Verify that the fans start and the front display becomes active. The system will boot automatically.~~

- ~~The XL green power on LED, located above the function buttons, lights up to indicate that power has been applied to the system midplane. The amber fault LED then lights up to indicate that power has been applied to the system controller. The fault LED goes out when the system controller has successfully initialized and the POSTs are completed.~~

***** Replace figure with equivalent for Origin 2000**

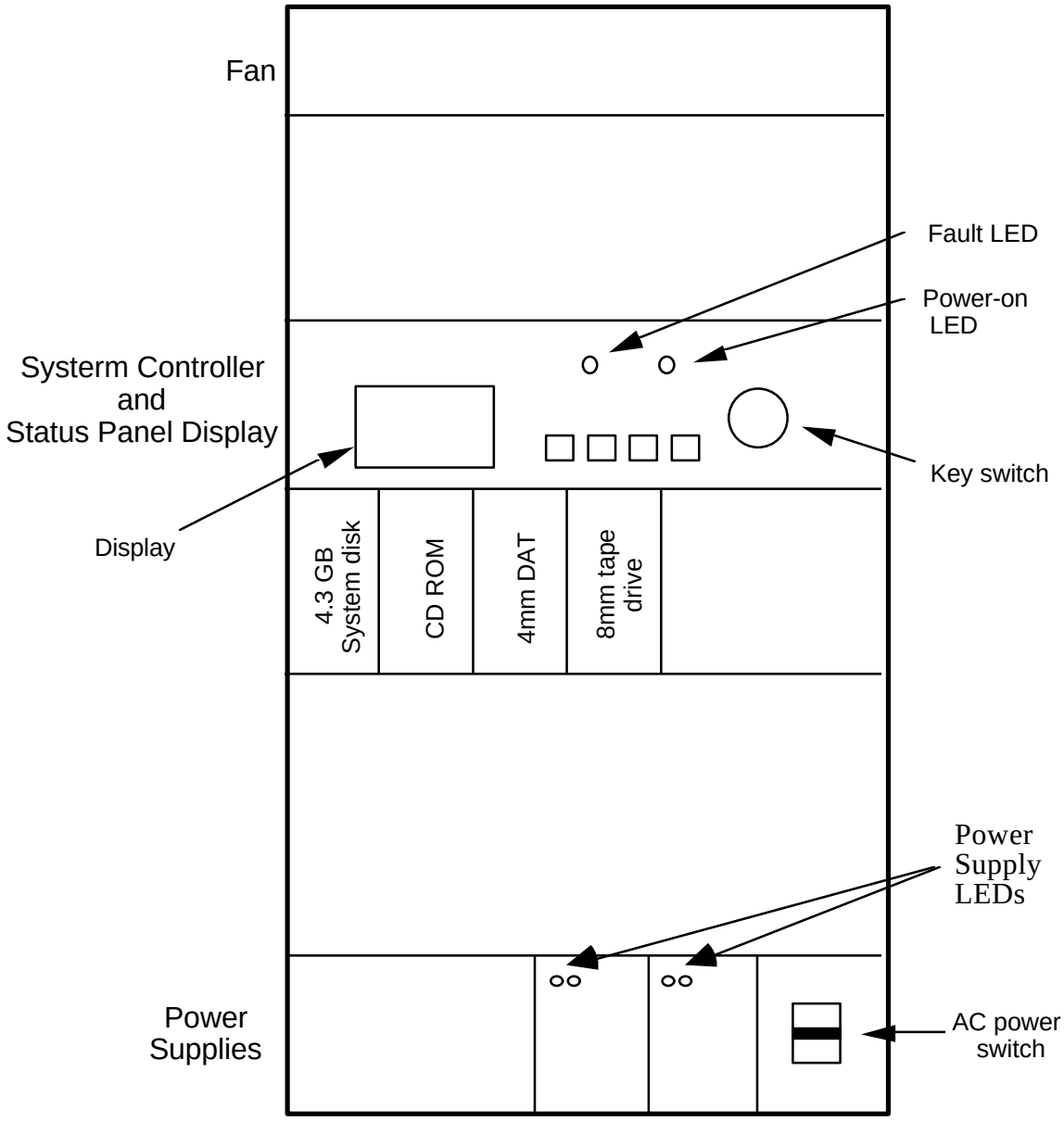



***Figure 4–1. Challenge XL – Front View, Doors Open***

- ~~Two NCD X Terminals—Refer to manufacturer's documentation. The monitor power switch is located on the back of the monitor. Verify that the power indicator is green. The power switch for the terminal base unit is located on the rear of the unit. Verify that the power LED is illuminated.~~

- ~~One SGI IRISconsole—Refer to manufacturer's documentation. Connect the power supply connector to the back of the IRISconsole.~~

- Three SGI O2 workstations—Refer to manufacturer's documentation. Turn on the monitor power switch on the front of the monitor. Verify that the power indicator is illuminated. On the system chassis, press and release the power switch on the front panel. The power indicator is amber for a

few seconds as the system runs the power on diagnostics. The LED turns green as the system boots. ???

- RAID/DLT cabinet (Figures 3–2 and 4–2)—Refer to manufacturer's documentation (Section 1.5). The power switches of the DLT and RAIDs are located on the rear of the unit. ???

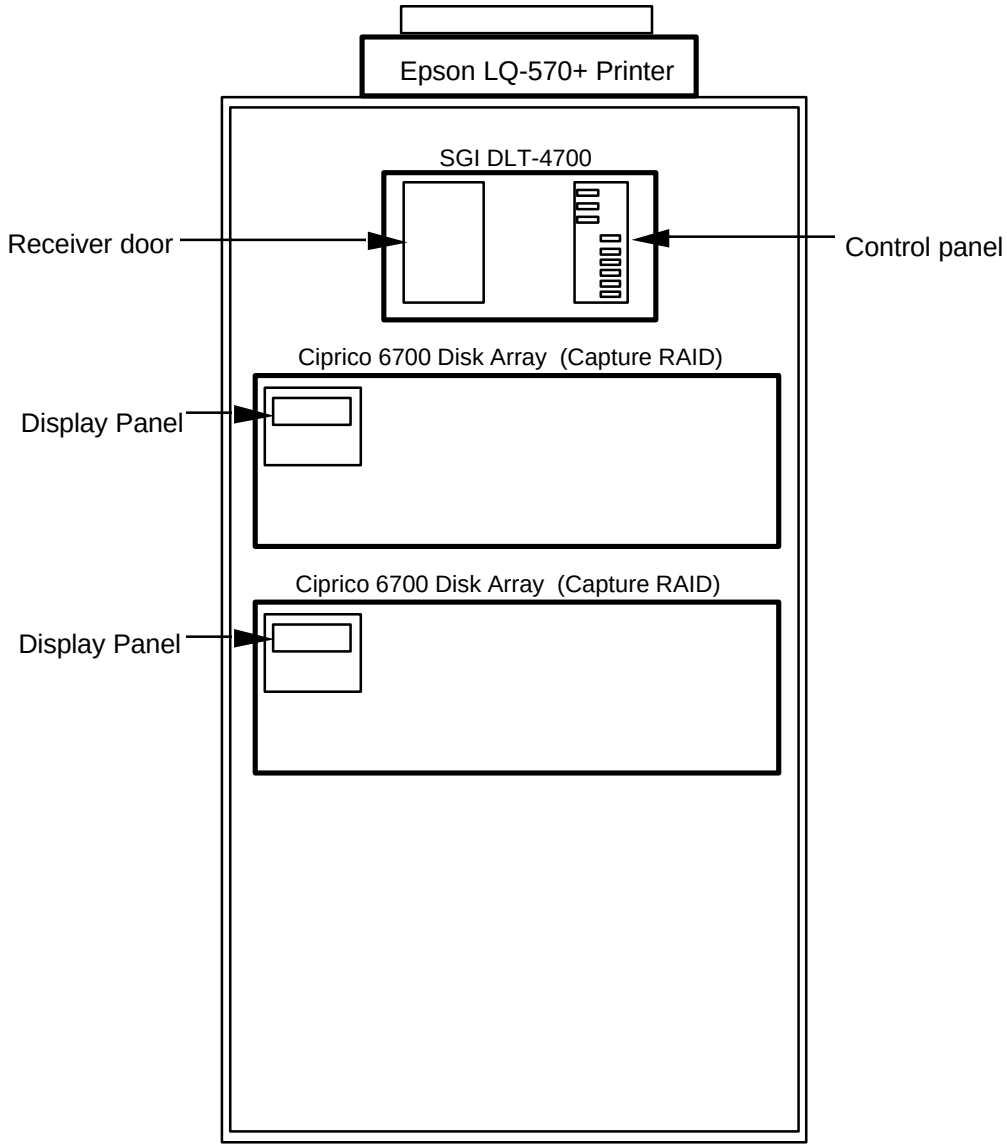
  When the DLTs are powered on, each unit goes through its power-on self test (POST) **(TBR)**. All of the LEDs on the front of the drive enclosure turn on sequentially from top to bottom as the POST begins. All four LEDs stay on solidly as the POST runs. All LEDs except the yellow tape-in-use LED go dark as the POST finishes. Apply power to the DLTs and verify the POST. ???

  At RAID power up, each RAID performs a built-in self test (BIST). This process takes approximately 10 seconds. At the conclusion of the process, the display should indicate "On Line Status: OK." Apply power to the RAIDs and verify the BIST. ???

***** What kind of printer for IAS ?**

- Epson LQ-570+ (Label) printers—Refer to manufacturer's documentation. Press and release the power switches on the front of the Epson LQ-570+ label printers and verify that the power indicator of each printer is lit.

- Two Hewlett-Packard (HP) LaserJet5 printers—Refer to manufacturer's documentation. Turn on the power switch on the front of each unit to "I" position. Verify that after the printer warms up, the display reads "READY."




***** Update for IAS. Are RAID/DLT in one cabinet ?**

***Figure 4–2. RAID/DLT Cabinet – Front View (TBD)***

## 4.4 Origin O2 Workstation Checkout

After the power up of each Origin O2 workstation, a login window appears. At the prompt, enter the name and password on each workstation. This login sequence verifies that the Origin O2 system is operational. The following subsections discuss testing the communication links to the Origin 2000 server.

Perform the workstation setup procedure described in *IAS Operations and Maintenance Manual* (Applicable Document 1.4.7 ).

## 4.5 Origin 2000 Checkout

***** Rewrite this section for Origin 2000 checkout procedure.**

~~At Indy 3, establish a console window for each LPS string by using the following steps from the IRISconsole utility:~~

~~1. Open the Icon Catalog icon from the Overview window.~~

~~2. Select the application from the Catalog window.~~

~~3. Select the IRISconsole icon on the Icon Catalog Application window.~~

~~4. Select an icon that represents string 1 on the IRISconsole window.~~

~~5. Select the "Get Console" button on the IRISconsole site window.~~

~~6. Enter the system console login ID and password.~~

~~7. Apply the selections.~~

~~After startup and selection are finished, the prompt "lps001 (or 002 through 005) login:" will appear on the Indy3 window. Type in the login and password. At the message "TERM=(vt100)" press <ENTER>. This verifies that the serial links to the Indy workstation are operational.~~

~~From Indy3, perform a system disk directory on Challenge XL 1. The command "ls -la"<ENTER> will display a long list of directory files.~~

~~Insert a blank 4mm cassette into the Challenge XL 1 digital audio tape (DAT) drive. From Indy3, copy a file from the system disk to tape using the command "tar -cvf /dev/tape <filename>." To display a list of files on the tape, type "tar -tvf /dev/tape".~~

~~Insert a blank 8mm cassette in Challenge XL 1 8mm drive. From Indy3, copy a file from the system disk to tape using the command "tar -cvf /dev/rmt6 <filename>". To display a list of files on the tape, type "tar -tvf /dev/rmt6".~~

~~Insert a compact disk - read-only memory (CD-ROM) in the Challenge XL 1 (or 2 through 5) drive. At Indy3, perform a directory using the command "ls/CDROM".~~

~~Repeat the above procedure for Challenge XLs 2 through 5.~~

~~The basic functionality of the IRISconsole and Challenge XL and its storage devices has been verified.~~

## 4.6 Ethernet LAN Checkout

At workstation 1, ping (a UNIX command) the Origin 2000 server. At workstation 2, ping the Origin 2000 server. At workstation 3, ping the Origin 2000 server. The network links between the Origin 2000 server and the workstations have been verified.

## 4.8 Digital Linear Tape Drive Checkout

***** Confirm this procedure (modified from LPS).**

Load a blank DLT cassette in the DLT drive. Follow the instructions printed on the front of the DLT drive. The DLT drive is connected to the small computer serial interface (SCSI) II interface. ~~Refer to the front of the DLT unit for the correct DLT unit number.~~

At the operator workstation, copy a file from Origin 2000 system disk to DLT using the "tar" command . Display a list of the files on DLT with the "tar" command.

## 4.9 Ciprico Disk Array (RAID) Checkout

***** Confirm this procedure (copied from LPS).**

The RAID checkout can be performed using the following steps:

1. Check the display on the front of each RAID to verify “On Line Status: OK”.

2. At the operator workstation console, use the “hinv” (hardware inventory) command to verify that both RAIDs are active

3. Use the “df -k” command to display file system from each RAID. This verifies that the RAID is mounted.

4. Use the UNIX command "cp" to copy a test file from the Origin 2000 system disk to each RAID and verify that the test file is transferred.

## 4.10 EDC DAAC Interface (FDDI LAN) Checkout

***** Does this modified LPS procedure hold for IAS ? Will there be a network verification tool on the Origin 2000 server ?**

The FDDI LAN checkout can be performed by using the FDDI network verification sofware tool which resides on the Origin 2000 ???. The checkout can be done by using the following steps:

1. From operator workstation Login to the Origin 2000.

2. Select the "winterm" icon.

3. At the Unix prompt type in the "fddivis" command then press return key (the fddivis command is a FDDI network support tool which automatically provides user a virtual image of all nodes and rings on the FDDI network).

4. Verify that Origin 2000 server and Origin O2 analyst workstations are connected to the FDDI network.

~~Optional: If the EDC DAAC is available, transmit a test file from LPS string 1 to the EDC DAAC . Verify the EDC DAAC directory for receipt of the files.~~

## 4.11 HP LaserJet5 Printer Checkout

***** What kind of printer does IAS have and what is the checkout procedure?**

~~After power up, the test printout will appear. At each Indy workstation, print test file to HP LaserJet5 printers 1 and 2 (named hp1 and hp2). Use the command "lp -dhp1 <filename>" or "lp -dhp2 <filename>" to print a file.~~

## 4.12 IAS Shutdown

Checkout of the IAS and its interfaces is completed. The IAS equipment can remain powered up. To shut down the IAS, perform the following procedure:

***** Need power-down procedures for IAS equipment.**

1. Origin 2000 server cabinet—At each Origin O2 workstation, log out from the Origin 2000 server. Turn the Origin 2000 key switch to OFF.

2. ??? printer—Turn off the power switch on the front of each unit to be powered down. ???

~~3. Two HP LaserJet5 printers—Turn off the power switch on the front of each unit to be powered down.~~

***** Are the RAIDs and DLT in one cabinet ?**

4. RAID/DLT cabinet—Turn off each RAID and DLT within the cabinet. The power switches of the DLTs and RAIDs are located on the rear of each unit.

6. Three SGI O2 workstations—Turn off the power switch on the front of the monitor. Turn off the system chassis on the front panel.

~~7. Five Challenge XL cabinets—Turn the Challenge XL power switch off.~~

This completes the power-down sequence.

# Section 5—System Turnover to the EDC DHF

This section describes the procedure to turn the IAS equipment over to the EDC DHF.

## 5.1 IAS Configuration

The IAS is composed of three hardware configuration items: the IAS Operations System, Image Analyst Workstations, and IAS Network, as documented in the IAS System Design Specification (Applicable Document 1.4.4). Sections 5.2 and 5.3 list the hardware and software components that are to be turned over to the EDC DHF.

## 5.2 Major Hardware Components

Table 5–1 lists the IAS hardware components. Refer to *IAS Operation and Maintenance Manual* (Applicable Document 1.4.7) for a more detailed listing of theIAS hardware components.

***** Check details of table. Are there FDDI components that should be included? Organize table according to HWCIs given above.**

***Table 5–1. IAS Hardware Components***

| Item | Quantity |
|---|---|
| SGI Origin 2000 rack mount server containing<br>• Eight SGI circuit boards ???<br>• One High Speed Parallel Digital Interface (HPDI) /Very High Speed Serial Interface (VSIO) board ???<br>• One 9.1-gigabyte system disk<br>• One CD-ROM<br>• One 8mm tape drive | 1 |
| SGI Origin O2 workstation, monitor, keyboard, mouse | 3 |
| RAID/DLT cabinet ???<br>Each cabinet contains<br>• One Boxhill DLT 4700<br>• Two Ciprico RAIDs | 1 |
| | |
| ??? printer | 1 |
| | |
| Ethernet 10Base-T Smart Hub | 1 |

## 5.3 Software Items

***** Need to confirm statement on backup tapes.**

All IAS software is preinstalled on the Origin 2000 server and Origin O2 workstations. The backup tapes, consisting of DLT cartridges, will be delivered to the EDC DHF personnel.

## 5.4 Documents and Manuals

The following documents are included in the IAS turnover to the EDC DHF:

1.IAS Installation Procedure

2.IAS Users Guide

3.IAS Operations and Maintenance Manual

4. IAS Programmers Reference Manual

5.IAS Software Configuration Guide

***** Check items 6-25 for applicability to IAS.**

6.*About Your 21-Inch Color Monitor NC2185AA*

7.*AD6700 Integrated Disk Array Quick Installation Guide*

8.*Addendum to the Disk Array Guide*

9.*Challenge/Onyx Site Preparation Guide*

10. *Digital Linear Tape Drive Owner's Guide*

11. *LaserJet5 Printer User's Manual*

12. *Indy™ Workstation Owner's Guide*

13. *Installing Your HMX Family System*

14. *High Speed Parallel Digital Interface (HPDI) / Very High Speed Serial Interface (VSIO) Card User's Manual*

15. *Power Challenge™ and Challenge XL Rackmount Owner's Guide*

16. *Product Note for 6700/10 Disk Arrays and Controller Boards*

17. *Epson LQ-570+ (Label) Printer User's Guide*

18. *IRISconsole™ Administrator's Guide*

19. *Software Installation Administrator's Guide (includes Installation Instructions CD)*

20. *ONC3/NFS™ Administrator's Guide*

21*Diskless Workstation Administration Guide*

22*Network License System™ Administration Guide*

23. *Selected IRIX Site Administration Reference Pages*

24. *NIS Administration Guide*

25. *IRIX™ Advance Site Server Administration Guide*

## 5.5 Demonstration

***** Define an appropriate demo for IAS.**

Optionally, after testing at the EDC is complete, the IAS can be demonstrated. ~~The capture of approximately 1 minute of test image data will be performed, and Level 0R processing will be initiated. The image will be displayed on the moving window display.~~

## 5.6 Site Acceptance Test

The IAS equipment installation is complete after the IAS Checkout (Section 4). The EDC DHF is responsible for conducting the IAS site acceptance test.~~ The LPS Project will support the EDC in conducting the LGS to LPS and EDC DAAC to LPS cabling and interface tests if they could not be performed during LPS checkout (Sections 4.10 and 4.13).~~

***** Is all of the IAS equipment turned over after SAT ? What remains at GSFC for continuing maintenance support?**

The IAS equipment and COTS software is formally turned over to the EDC DHF after completion of the SAT. Afterwards, the GSFC IAS Project and the EDC DHF follow *IAS Transition Plan* (Application Document 1.4.2) to complete full acceptance of the IAS by the EDC DHF.

# Appendix A—Installation Checklist

***** This will be fully updated when questions are resolved.**

| Description | EDC DHF Representative | EDC Engineer |
|---|---|---|
| **4.3 IAS Startup** | | |
| Step 1: Origin 2000 power | | |
| | | |
| Step 3: Origin O2 workstations 1, 2,and 3 power | | |
| | | |
| RAID/DLT power | | |
| | | |
| | | |
| Step 5: ??? printer power | | |
| | | |
| **4.4 Origin O2 Workstation Checkout** | | |
| Workstation 1 login | | |
| Workstation 2 login | | |
| Workstation 3 login | | |
| **4.5 SGI Origin 2000 Checkout** | | |
| | | |
| | | |
| Origin 2000 system disk | | |
| | | |
| Origin 2000 8mm tape | | |
| | | |
| | | |

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| **4.7 Ethernet LAN Checkout** | | |
| Origin 2000 server to Origin O2 workstation 1 | | |
| Origin 2000 server to Origin O2 workstation 2 | | |
| Origin 2000 server to Origin O2 workstation 3 | | |
| | | |
| | | |
| **4.8 Digital Linear Tape Drive Checkout** | | |
| DLT file write test | | |
| | | |
| **4.9 Ciprico Disk Array (RAID) Checkout** | | |
| | | |
| | | |
| **4.10 EDC DAAC Interface (FDDI LAN) Checkout** | | |
| Origin 2000 FDDI | | |
| Analyst workstation 1 | | |
| Analyst workstation 2 | | |
| | | |
| | | |
| Origin 2000 and EDC DAAC FDDI | | |
| **4.11 ??? Printer Checkout** | | |
| | | |
| | | |
| | | |
| **4.14 IAS Shutdown** | | |
| Step 1: Log out at workstations 1 2 and 3 | | |
| Step 2: ??? printer power | | |
| | | |
| Step 4: RAID/DLT cabinet power ??? | | |
| | | |
| Step 6: Workstation 1,2 and 3 power | | |
| Step 7: Origin 2000 server power | | |

# Appendix B— IAS Equipment Turnover Document (TBR)

The IAS Project will use GSFC Form 10-4 (**TBR**) to turnover the control of all IAS equipment to the EDC DHF. A sample of this form is provided on the next page (**TBD**).

# Acronyms

| | |
|---|---|
| ac | alternating current |
| BIST | built-in self test |
| BNC | |
| Btu | British thermal unit |
| CCR | configuration change request |
| CD-ROM | compact disk—read-only memory |
| CSR | consent to ship review |
| DAAC | Distributed Active Archive Center |
| DAT | digital audio tape |
| DCN | document change notice |
| DLT | digital linear tape |
| EDC | EROS Data Center |
| EROS | Earth Resources Observation System |
| FAT | factory acceptance test |
| FDDI | fiber distributed data interface |
| FTP | File Transfer Protocol |
| GSFC | Goddard Space Flight Center |
| HP | Hewlett-Packard |
| HPDI | high speed parallel digital interface |
| ICAS | Interactive CCR Automation System |
| ICD | interface control document |
| IP | Internet Protocol |
| LAN | local area network |
| LED | light emitting diode |
| LGS | Landsat 7 Ground Station |
| LP | Land Processes |
| LPS | Landsat 7 Processing System |
| POST | power-on self test |
| RAID | redundant array of inexpensive devices |
| SAT | site acceptance test |
| SCSI | small computer serial interface |
| SGI | Silicon Graphics, Inc. |
| VSIO | very high speed serial interface |